

Work Order ID 81882 - 2

81882

Page 1

Tuesday, March 20, 2012 11:26:38 AM

Item ID: D6104-003 Accept *N900040100* Setup Start *NS1*
 Revision ID: Stop *NS2*
 Item Name: Round Billet, 17-4
 Start Date: 3/20/2012 Start Qty: 20.00 *SPUR 7* *40* *20* Cust Item ID:
 Required Date: 3/26/2012 Req'd Qty: 20.00 *20* *20* Customer:
 Reference:

Approvals: Process Plan: Date: Tooling: Date: Run Start *NR1*
 QC: Date: SPC (Y/N): Date: Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
D6104	Rev B

100		0.00							
100	PURCHASING								
Purchasing	Memo	0.00							
Purchasing	Issue P/O: <i>16512</i> a)Description: S.S round billet b) Ø3.25" x 3.80" long c) Tolerance on all dimensions are +0.030"/-0.000"d) Material: 17-4PH Stainless steel (Ams 5643 or Aisi 630)e)One blank makes 2 partsf) Material certification required								

CL 12/03/21 40

110	Receive & Inspect for Damage & Mat'l Certs	0.00							
110									
Packaging	Memo	0.00							
Packaging	Ensure material certification is attached								

CL 12/4/14 7

120	QC6- Inspect dimensions to drawing	0.00							
120									
QC	Memo	0.00							
Quality Control	Ensure Material certification comply to Dwg D6104								

CL 12/4/15 7

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	Identify as per dwg & Stock Location: <u>CUC</u>	0.00				7			
130									
Packaging	Memo	0.00							
Packaging									
140	QC21- Final Inspection - Work Order Release	0.00							
140									
QC	Memo	0.00							
Quality Control									

12/4/10
 12-04-07

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Tuesday, March 20, 2012 11:26:43 AM

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Work Order ID: 81882

81882

Parent Item: D6104-003

D6104-003

Parent Item Name: Round Billet, 17-4

Start Date: 3/20/2012

Required Date: 3/26/2012

Start Qty: 20.00

Required Qty: 20.00

Comments: IPP B: 01.09.04 Revised Step 2 SM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6104-003P		Purchased		No		110	Each	0.0000	1	20			
D6104-003P									**				
17-4 SS Roundbar 3.25"OD													

12/4/12

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

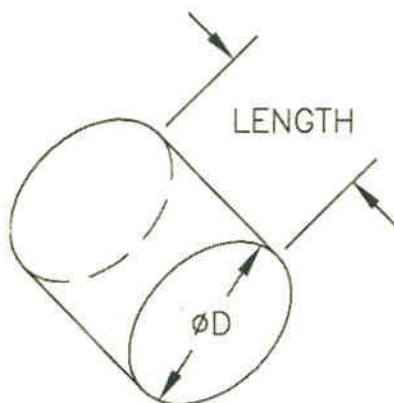


DESIGN 	DRAWN BY 	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED 	APPROVED 	DRAWING NO. D6104	Rev. B SHEET 1 OF 1
DATE 02.11.25		TITLE ROUND BILLET, 17-4	SCALE NTS
A	01.04.10	NEW ISSUE	
B	02.11.25	CLARIFY ALLOY SPEC ADDED D6104-009/-011 REDUCE LENGTH OF BILLETS	

RELEASED

02.11.29

SPECIFICATION CONTROL DRAWING



CL 12/03/21
W10'. 8/882

MATERIAL: 17-4 PH SS (AMS 5643 OR AISI 630) MIN UTS = 170 KSI (38 HRC)

PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, DIAMETER x LENGTH (+0.030/-0.000) AS SHOWN.

TOLERANCE ON ALL DIMENSIONS IS +0.030/-0.000.

ALL DIMENSIONS ARE IN INCHES

Part No.	Alloy	D (Diameter)	Length
D6104-001	17-4 PH STAINLESS STEEL	Ø3.00	3.80
D6104-003	17-4 PH STAINLESS STEEL	Ø3.25	3.80
D6104-005	17-4 PH STAINLESS STEEL	Ø4.00	5.10
D6104-007	17-4 PH STAINLESS STEEL	Ø4.50	5.10
D6104-009	17-4 PH STAINLESS STEEL	Ø5.25	4.10
D6104-011	17-4 PH STAINLESS STEEL	Ø6.50	4.10

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**Castle Metals®**

A. M. Castle & Co.

BORDEREAU DE MARCHANDISES

Page 1 of 2

No de Formulaire d'Emballage / Shipment No: 1254710

Expédié de / Ship From: A. M. Castle & Co. (Canada) Inc. MONTREAL 835-SELKIRK AVENUE POINTE CLAIRE, QUEBEC H9R 3S2		Vendu à / Sold To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA		Expédié à / Ship To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN		Livré à / Deliver To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA			
Date d'expédition / Date Shipped 02-APR-2012		F.O.B. ORIGIN		Modalités de transport / Freight Terms Prepaid		Transporteur / Carrier MANITOULIN		No du Bon de connaissance / BOL No 1254710-2	

Détails d'expédition / Shipment Details	Destination finale / Final Destination Branch - MON
--	--

N° de commande / Order No	N° de ligne / Line No	N° d'article / Item No	Description
2086611	3	42470.MO	3.2500.RD.17CR-4NI.STAINLESS.RT.SOL TR.COND A.132.0000-156.0000 CUT TO 3.8 IN (+ .0620/- .0000 IN) - BAND SAW CUTTING SPECIFICATIONS: AMS 5643
N° de bon de commande / Purchase Order No	Nbre de pièces / Part Number	Qté commandée / Ordered Qty	Qté Facturée / Invoice Qty
16517	YOUR ITEM NUMBER: D6104-003	7.00 PCS	7.0000 PCS

Détails / Details								
N° de livraison / Delivery No :	Usine / Mill	No de coulée / Heat Number	Code mec / Mech Id	Pièce s / PCS	Largeur (Pouce) / Width (IN)	Longueur (Pouce) / Length (IN)	Qté expédiée / Shipped Qty(LBS)	
117493734		9EY4		7			62.53	

Ces marchandises/technologies sont sujettes aux règlements de l'Export Administration et du département d'état des Etats-Unis. Si elles ont été/sont exportées, elles doivent se conformer à ces règlements. Toute modification du contrat de transport contraire aux lois des Etats-Unis est interdite.

These commodities/technologies are subject to US Export Administration & US State Dept. Regulations and, if intended for export, were/are exported thereunder. Diversion contrary to US Law is Prohibited.

Nous certifions par la présente que le matériel couvert par cette certification est conforme aux spécifications susmentionnées et aux exigences applicables pour le matériel, y compris toute spécification faisant partie de la description. Les rapports d'essai sont archivés pour fins de consultation. Toute requête concernant du matériel défectueux sera rejetée à moins qu'elle ne soit faite par écrit à A. M. Castle & Co. dans les 60 jours suivant la livraison. Le matériel coupé sur mesure ou coupé par le client ne peut être retourné pour crédit.

We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.

Ce matériel a été reçu et inspecté par

Date: Name:

These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to US law prohibited.

Castle Metals FP

HEAT NUMBER 9 EY4
MECHANICAL ID _____
ITEM CODE 42470
LOT NUMBER _____
PO NUMBER 104195
RECEIPT DATE 5-31-2011
SUPPLIER NAS
SPECIFICATION _____
LCS 10
COMMENT _____
APPROVED BT



NORTH AMERICAN
STAINLESS

METALLURGICAL TEST REPORT

6870 Highway 42 East
Ghent, KY 41045-9615
(502) 347-6000

Certificate: 644968 18
Customer: 0032 001
NAS Order: LN 72107 1
Your Order: 104195

Mail To:
A.M. CASTLE AND COMPANY
3400 NORTH WOLF ROAD
FRANKLIN PARK IL 60131

Ship To:
A.M. CASTLE AND COMPANY
3400 NORTH WOLF ROAD
FRANKLIN PARK IL 60131

Date: 5/22/2011 Page: 1 Of 1
Steel: 630(17-4)
Finish: Hot Finish
Dia/Thk: 3.2500 in
Leg Length:
Length: 144.00 in
Corrosion:

Item Code: 42470

PRODUCT DESCRIPTION:

AMS 2303E, AMS 5643R
Round Bar, Hot Rolled, Annealed, Rough Turned
UNS S17400; EN 10204 3.1B, ASTM A484/08
ASTM A564/10 ASME SA564-07

REMARKS:

COMPLIES W/REQUIREMENTS OF DFARS EU DIRECTIVE 2002.95.
EC. RoHS. EAF+AOD+CC. NO WELD REPAIR. MELTED AND MFG IN USA
FREE FROM MERCURY AND LOW MELTING ALLOY CONTAMINATION

Bundle Weight	Bundle Weight	Bundle Weight	Bundle Weight	Bundle Weight	Bundle Weight	Bundle Weight	Bundle Weight	Bundle Weight	Bundle Weight
BD83189	2410								

CHEMICAL ANALYSIS

CM(Country of Melt) ES(Spain) US(United States) ZA(South Africa) JP(Japan)

Heat	Supplier #	CM	C	CB	CO	CR	CU	MN	MO	N	NI	P
9EY4		US	.034	.233	.06	15.33	3.20	.54	.16	.040	4.27	.030
			S	SI	TA	TI						
			.0095	.66	.0055	.0020						

MECHANICAL PROPERTIES

	l d o i c r	HB No.	Ferr %	TS-C KSI	YS-C KSI	El-C %	RA-C %	RC-C No.
BD83189	R L	302.0	.76	192.96	171.72	11.85	48.81	41.5

NAS hereby certifies that the analysis on this certification is correct and the material meets the specifications stated.

QC ENGINEER

ERIC HESS